СОЦИОЛОГИЧЕСКИЕ ИССЛЕДОВАНИЯ В ОБРАЗОВАНИИ

STAKEHOLDER INVOLVEMENT IN THE CURRICULA MODERNISATION THROUGH A VIRTUAL FORESIGHT LABORATORY

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Abstract*. Introduction.* Involvement of stakeholders into curricula modernisation in modern educational institutions has always been significant due to the existing misbalance between the social requirements and outdated educational materials.

Aim. The *aim* of the research is to analyse the three dimensions of stakeholder involvement into curricula modernisation in education on the basis of Kostanay regional university named after A.Baitursynov (Kostanay, Kazakhstan): maximal involvement, partial involvement, and formal participation.

Methodology and research methods. The research is based on the 10 sessions 1.5 h each organised on the platform of the virtual foresight laboratory (VFL) specially designed for the realisation of maximal involvement of the participants. Two in-depth face-to-face interview sessions with the focus groups (FG) participants (1 entry interview and 1 post-sessional interview) were organised and processed.

Results. The results of the sessions with 6 stakeholders represented focus group 1 that demonstrated the new maps of the future curriculum and modernised the text of the existing educational curriculum in terms of the goals, content and competencies requirements. The highlights include the following results of the study: the FG1 participants indicated their synergy in foreseeing the future through mapping, trends design and discussions in VFL;

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there was the increase of the learning gain among FG1 stakeholders in terms of the structure of the curriculum, educational programme, types of competencies, foresight research; the personal growth of stakeholder involvement into curricula modernisation was directly observed, as their gained experience was reflected in further modernisation of educational programmes of other majors.

Scientific novelty. The research presents the key theoretical role of virtual foresight laboratory in curricula modernisation, basic theoretical issues on design of the future maps and foresight planning.

Practical significance. Practical outcomes in curricula modernisaion can be adapted to any educational institutions aimed at perspective planning and foresight applications.

Keywords: foresight, foresight laboratory, stakeholder, curricula modernisation, participation.

ВОВЛЕЧЕНИЕ СТЕЙКХОЛДЕРОВ В МОДЕРНИЗАЦИЮ ОБРАЗОВАТЕЛЬНЫХ ПРОГРАММ ПОСРЕДСТВОМ ВИРТУАЛЬНОЙ ФОРСАЙТ-ЛАБОРАТОРИИ

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Аннотация. *Введение*. Вовлечение стейкхолдеров в модернизацию образовательных программ в современных образовательных учреждениях является значимым процессом ввиду существующего дисбаланса между требованиями общества и устаревающими обучающими материалами.

Цель. Цель исследования – проанализировать три механизма вовлечения стейкхолдеров в модернизацию образовательных программ на базе Костанайского регионального

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университета им. А. Байтурсынова (г. Костанай, Казахстан): максимальное вовлечение, частичное вовлечение и формальное участие.

Методология и методики. Исследование основано на 10 сессиях (длительностью 1,5 часа каждая), организованных на платформе виртуальной форсайт-лаборатории (ВФЛ), специально разработанной для реализации максимального вовлечения участников в процесс модернизации. Были организованы и проанализированы два глубинных интервью с участниками фокус-групп (ФГ) (1 констатирующее интервью и 1 постсессионное интервью).

Результаты. Результаты сессий с 6 стейкхолдерами (фокус-группа 1) представлены в форме создания новых карт будущей образовательной программы, модернизации текста существующей образовательной программы с точки зрения целей, содержания и требований к компетенциям. Основные моменты включают следующие результаты исследования: участники ФГ 1 продемонстрировали синергию в предвидении будущего посредством картирования, разработки тенденций и обсуждений в ВФЛ; стейкхолдеры внесли изменения в структуру образовательной программы, виды компетенций, использовали форсайт-исследования, показали личностный рост и увеличение доли вовлеченности в модернизацию образовательных программ, так как накопленный ими опыт отразился на дальнейшей модернизации образовательных программ всех специальностей.

Научная новизна. В исследовании представлены ключевая теоретическая роль виртуальной форсайт-лаборатории в модернизации образовательных программ, основные теоретические вопросы проектирования карт будущего и форсайт-планированиях.

Практическая значимость. Практические результаты модернизации образовательных программ могут быть адаптированы к любым образовательным учреждениям, ориентированным на перспективное планирование и использование форсайта.

Ключевые слова: форсайт, форсайт-лаборатория, стейкхолдер, модернизация образовательной программы, партисипация.

Introduction

Stakeholders have always been the leading figures in the process of education modernisation both as the external evaluators and the actors who 'outline pathways toward upward mobility' [1]. Since stakeholders in education have been the aspect of three "s" ("stakeholder, strategy and scale") [2], their role in curricula modernisation is high. Involving stakeholders into the process of curricula modernisation implies their active, 'co-creative' role [3] in "producing im-

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portant findings to make easier transitions" [4] as well as changes in trajectory of education based on the needs of society.

According to E. Levina, the so-called 'stakeholder approach' to education management has been recently perceived as the analytical one incorporating social, economic, organisational levels of forming any curriculum [5]. A. Patrakhin [6] and T. Yekshikeev [7] note that stakeholder approach or stakeholder-mediated management as the holistic perspective encompasses the dimensions of education, society, and economy.

Recent research in the field of stakeholder involvement into educational institutions (both intrinsic and extrinsic) emphasises three main strategies:

– maximal involvement of stakeholders into the processes in the HEIs (Higher Educational Institutions);

– partial or motivational involvement (irregular meetings, consulting and giving fragmentary recommendations;

– formal and generalised involvement (informing about the modernisation, including inconsistent amendments and corrections).

Stakeholder predisposition based on observations mainly [8] nowadays has been altered to transparency approach to modernisation of educational curricula in any universities for it results in low level of competencies of future specialists.

At the same time, the stakeholder involvement into curricula modernisation has not been thoroughly studied, as 'the coherence' [9] of stakeholder involvement is organised on the regular basis using face-to-face meetings, seminars, conferences and other traditional forms of participation resulting in insufficient performance and formal approach to curricula modernisation.

The research is **aimed** at assessing the virtual foresight laboratory implemented for maximal stakeholder involvement into curricula modernisation.

The **objectives** of the research:

1. To conduct two interviews with the stakeholders (one entry interview with focus groups participants *before* and one interview *after* curricula modernisation) on the issue of their involvement into curricula modernisation;

2. To organise the work of the virtual foresight laboratory via establishing sessions with the focus group participants of the research;

3. To analyse the gain of the work of the virtual foresight laboratory as a tool of stakeholder involvement into curricula modernisation;

4. To present the qualitative analysis as well as research outcomes based on the post-sessional interviews with stakeholders in two focus groups.

The hypotheses reflect the problem questions (Q) of the research: Q1 – What is the role of the virtual foresight laboratory (VFL) in stakeholder involvement into curricula modernisation?; Q2 – Does the VFL have the direct impact

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on each of the curricula modernisation process through the use of maps of the future, trends, threats and opportunities analysis?

Consequently, **hypothesis 1 (H1):** VFL accelerates the process of curricula modernisation through the usage of guided foresight sessions; **hypothesis 2 (H2)** – Co-planning, co-working and guided sessions in the field of curricula modernisation transform the stakeholder involvement into the effective tool of strategic analysis of educational perspectives in mediated format.

Literature Review

The research of the stakeholder involvement into curricula modernisation is based on versatile approaches and trends in scientific research. So, the following works influenced the research perspectives: general understanding of the stakeholder involvement in any social sphere (aimed at general comprehension of the term) was disclosed by Hage, Leroy, Petersen [10] dealing with the project leadership and participatory stakeholder involvement; theories of stakeholder involvement based on the levels of their representation [11, 12] were adapted for the three possible dimensions of the research – maximal involvement, partial involvement and the formal participation of stakeholders; social responsibility theory was used as a strategic basis for the research [13] in terms of joint map design and risk analysis.

Global issues on stakeholder approach to educational management as "transformational tool in regional development of educational institutions" served the same function as the systems approach to the stakeholder involvement into curricula modernisation as a part of this process [14]. But still there is a certain gap in the research of the stakeholder involvement into curricula modernisation as a local process having the direct impact on education transformation brining foresight technologies together for future map design.

The use of digital tools for stakeholder involvement into modernisation of education is not a new one (technological changes in the concept of 'corporate social responsibility' among stakeholders by Mazur-Wierzbicka [15], Multidimensional Corporate Stakeholder Responsibility Scale [16], etc.). The aim of the use of digital tools in stakeholder involvement is to intensify the remote collaboration of participants.

Virtual foresight laboratories have the direct influence on the "support information processing, participation, and utilisation" [17] on any transformations in education. Selin points out that 'mediating scenarios' in VFL lead to emergence of new ideas of stakeholders when discussing the directions of curricula modernisation [18].

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However, all of the studies disclose the theoretical and practical issues on stakeholder involvement in traditional format, the use of valid foresight approaches in education is limited and restricted to manuals and instructions.

Recommendation to use CANVAS as a platform for foresight sessions was presented in the NTI (National Technological Initiative) for constructing formats of foresight tact applied to business models [19]; bibliometric 'mining' for any foresight sessions was introduced by Gibson, Daim, Garces, Dabic [20]; networking for foresight was thoroughly disclosed by Grabher, Stark [21]. But these works have either general character encompassing various spheres (predominantly, economical and technical), or excessively detailed (presenting threats, formats, tact, algorithms in PESTEL foresight analysis, live 'road maps' constructors, etc.). Consequently, this research aims to disclose the steps of VFL sessions mediated in Moodle platform for stakeholder involvement into curricula modernisation as a tool for maximal participation of these agents of education.

Methodology

3.1. Sample

The experimental work was carried among stakeholder groups of Kostanay (Kazakhstan) on the basis of Kostanay Regional University named after A. Baitursynov. 11 stakeholders were involved into active curricula modernisation as the result of the use of virtual foresight laboratory. The stakeholders representing the sample are characterised by the following parameters: all of them are the representatives of educational institutions (acting teachers, head masters, school authority, vice-rectors, Ministry of Education deputies); all of the stakeholders have sufficient digital skills to participate in online sessions (free users of Zoom, Telegram, WhatsApp, Padlet, Miro); all of the participants express their willingness to take part in sessions (the invitations were accepted, the consent of participation was gained).

We framed 2 focus groups (FG) based on stakeholders' written consent on the participation in online sessions through VFL (FG1 – 6 stakeholders – Intervention group), FG2 – 5 stakeholders – Control group). There were no any exclusion criteria for the experimental work. The statistical data of both focus groups are presented in Table 1.

Table 1

FG1 and FG2 participant parameters

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Participant parameter	Index of FG1 (n = 6)	Index of FG2 (n = 5)	Previous work in online sessions (FG1)	Previous work in online sessions (FG2)
Age (range, years)	47	44		
Gender				
Male	4	3		
Female	2	2	100%	80%
Work experience (administrative, range)	17	15		

3.2 Ethics of the Research

The participants expressed their willingness to take part in the research, their personal data is confidential and their impact is not disclosed, and protected by the informative consent properly filled in and signed.

3.3 Intervention Group (FG1)

All of the stakeholders were sent the electronic invitations for the authorisation on the VFL individually. The dates of online sessions were settled using Doodle Engine beforehand.

3.4 The Procedure of the Work of VFL

The work of the created online VFL (via the hyperlink on the university system having the access for preliminary registered users-stakeholders) was carried out within the period of 3 months (September–December 2021, online).

Technical parameters of VFL [22] in Baitursynov Kostanay Regional University (BKRU) are the following: server part – PHP-framework Symfony, SQL database MariaDBD; client part – JS-framework VueJS, On-Line meetings, foresight sessions using BigBlueButton; analytical part – 'Foresight. Analytical Platform'.

The FG1 participants received the drafts of maps of the future, road maps of Kazakhstan and the link to existing "Altas of Emerging Jobs" professions in Kazakhstan and abroad [23, 24].

The work of VFL was organised the following way:

1. Propaedeutic stage (preliminary work on the theory of sessions organisation, constructing consent letters, identifying the overall scenarios of sessions, choosing the curriculum for modernisation as the material for analysis);

2. Procedural stage (choosing 3 moderators for the focus group (3–5 stakeholders) sessions, carrying out the series of 10 sessions per each focus group monthly);

3. Reflective stage (producing tangible results in each session of the educational programme in terms of goals, content, competencies and expected results of the educational programme, collecting 2 external reviews per the modernised educational programme).

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3.5 Propaedeutic Stage of the Work of VFL

The set of methods were applied to the process of collecting entry data (in-depth interview, checklists, online survey), training procedures (10 sessions in VFL, constructing maps of the future, verbal reflection), consolidating remarks (written consent, reviews, feedback letters). The moderators and the technical staff decided on the following questions to be addressed to the stakeholders (the choice of the questions was made on the basis of 50/50 approach – 50% of main questions and 50% of clarifying issues). Finally, the moderators came to the following set of *main* questions:

1. What are the main requirements to the university graduates when being recruited by the stakeholders now? In 5 years period? In 10, 15, 20, 30 years perspective?

2. Which goals should be reflected in the educational curriculum for the nearest future?

3. Which topics must be added/changed/deleted from the educational curriculum?

4. Which qualities do you see in the university graduates? Will they be altered in 5, 10, 15, 20, 30 years period?

5. Could you assess the existing educational curriculum (1–10 scale)?

The issues of *clarifying* concern incorporate the following versatile questions:

1. Which strategy can be suitable for curricula modernisation among stakeholders based on their needs and opportunities?

2. Who is to moderate the work of virtual foresight laboratory?

3. How should you implement the process of stakeholder involvement into curricula modernisation?

4. What are the scales of evaluation/assessment of the process of stakeholder involvement based on VFL?

5. Is the special sustainable training needed for stakeholder involvement into curricula modernisation?

The use of online tools of VFL – screen sharing, Miro boards, Padlet tool for brainstorming – were planned to assist the discussion. Two moderators were required to manage the foresight session.

The supposition on the stakeholders acting as the integral agents of curricula modernisation has resulted in the following additional **hypothesis arisen before the organisation of the foresight sessions as a value-added outcome**: virtual foresight laboratory is the flexible tool for stakeholder involvement into the curricula modernisation uniting three main strategies (maximal involvement, partial participation and general instructing) in higher education institutions.

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3.6 Procedural Stage of the Work of VFL

During 60-minutes foresight sessions (Moodle mediated using Big-BlueButton service online meeting) the participants exchanged their opinions on modernisation of the curricula.

The scenario 1 (Goal-setting foresight session) of the foresight session is fragmentarily presented below:

Step 1. Topic introduction. Students set the goal for curricula modernisation of the chosen educational programme (Ex: 5B019900: "Foreign Language: Two Foreign Languages"), presenting the existing goal-oriented block of the curriculum.

Step 2. Timeline perspectives. The participants are introduced with the cards to be allocated at the timeline perspective (tactic trend – 2-3 years perspective; operational trend – 10-15 years perspective; strategic trend – 20-30 years perspective) – Trend, Technology, Format, Event, Normative act, Threat. Each card contains the name, curriculum description and the session number.

Step 3. Brainstorming. The participants share their associations with the goal-setting process, discuss the importance of the goals for overall description of the curriculum.

Step 4. Trending. The participants identify the goals for the 5, 10, 30 years trend perspectives using Padlet tool. The following goals were identified: "*Students will be able to work with the students as the team shifting their roles from time to time"; "The high education will turn obligatory in Kazakhstan, so the goal of the study will uncover not only the use of ICT, but the production of new knowledge*".

Step 5. Technology choosing. After the voting for the best goal indicated in Padlet, the stakeholders present their views on the choice of technology. The participants state the technologies (technological decision based on the trend development or its fading) that can assist the trend growth – alumni networking, headhunting university services, foresight laboratories and SMM centers.

Step 6. Discussing formats. The stakeholders agreed on the blended format of communication among participants of education with its slight transformation to distance format – "*The students will no longer communicate face-to-face provided the stable technological development"; "Online education and open university format will replace the traditional venue-based one*".

Step 7. Discussing events. To achieve the goals, the discussing events can be organised in the form of online meetings, blended and distance tutorials, workshop, PechaKucha, the tendency to limit transmitting formats of education for thought-provoking exercises.

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Step 8. Following normative acts. The stakeholders discuss the trends in normative acts – programmes, projects and the road maps of Kazakhstan (The Programme "Digital Kazakhstan", Atlas of Emerging Jobs, The Road Map of New Professions in Kazakhstan) that comply with their ideas on the future education.

Step 9. Identifying threats. Brainstorming approach assisted stakeholders in mentioning the following threats (Miro tool) – *"Dependence of education on the technology"; "Excessive use of communication for learning instead of communication in the process of learning"; "Emphasis on the creativity development resulting in the low foundation (knowledge)".*

Step 10. Allocating cards. The participants allocate the cards on the timeline perspective (from the nearest to the strategic, refusing from the cards having no possible realisation within the given timeline). The cards are rejected, allocated and discussed over. The example of the cards allocation is presented in Figure 1.
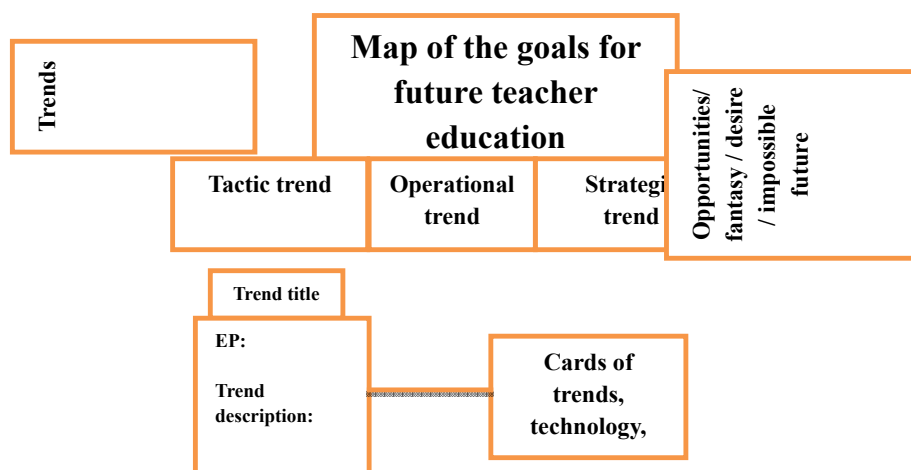

Fig. 1. The draft of the mapping based on foresight cards allocation

Step 11. Conclusion/wrap-up stage. The moderators emphasise the milestones of the timeline in terms of goals development of future teacher training, the final resolution is announced. The process of curricula correction takes place in the online simultaneous format (the section of goals, objectives, expected results, competencies description of the curriculum)

Step 12. The bridge to the next foresight session. The participants are given the content session of the curriculum (disciplines, themes, topics, methods, forms of study) for further discussion during the upcoming sessions.

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Control group (FG2)

Control group was given the existing educational curriculum via e-mail with the favour for changing it in accord to their new needs and demands. They were given the same period of time (September–December 2021).

Results and Discussion

4.1 FG1 sessions

The sessions with the FG1 participants were delivered on the base of the VFL in their personal area. As the result of the discussions with stakeholders, the educational programme sample was modernised up to 25% (updating goals, changing the content, adding new trends in teaching and learning, etc.).

The excerpt from the updated educational programme "Foreign Language: Two Foreign Languages" based on foresight technology (using the proximal approach and space to complement the goals, when using SWOT analysis of the previous text of the educational programme with changes [text] is given below (Table 2).

Table 2

Target goal-setting component of the educational programme
using foresight technology

Text in Kazakh **/** Text in Russian **/ The purpose of the educational programme**
Text in Kazakh [_____]   **Text in Russian [_____]**
Training of a highly qualified bachelor in two foreign languages with knowledge of English, with high social and civic responsibility, capable of carrying out professional activities using innovative [digital] educational technologies [_____]

The goal-setting component when modernising has the feature of supplementing and reassessing all aspects by the stakeholders (students, teachers, employers, public authorities, etc.).

With respect to the content component, stakeholders demand the qualities of future design. So, the range of general competencies (GC) includes the following aspects: *after the successful completion of the educational programme, the student will be able to* (these competencies were co-modernised (text in italics) by the FG1 participants):

GC1 to apply linguistic knowledge for an objective assessment of what is happening in a modern *globalising* society with an *active* position of a patriot and citizen;

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GC2 to plan the decision making *and forecasting* of specific social, political, cultural problems using knowledge in the field of linguistics *and foresight research*;

GC3 to interpret philosophical knowledge and build on their basis of an ideological and ethical position;

GC4 correctly use the stylistic means of the language for successful written and oral communication *using the mediated format*;

GC5 to solve the problems of communication and cognition in the conditions of trilingualism *and globalism, transcendental world*;

GC6 to apply *digital* security measures;

GC7 to improve ICT knowledge *throughout life*;

GC8 to critically evaluate philosophical concepts that are relevant for identifying the philosophical content of the problems of the professional field;

GC9 to assess the situation in various areas of interpersonal, social and professional communication;

GC10 to synthesise the knowledge of methodology, linguistics, pedagogy, and psychology *for the synergy of anticipating the events of pedagogical reality*;

GC11 to formulate and competently argue their own moral position in relation to the pressing problems of modern society;

GC12 to build the trajectory of personal development throughout life through the methods and means of culture;

GC13 to demonstrate civic responsibility, leadership, effective teamwork in solving professional problems *both individually and collectively*;

GC14 to reflect on their needs and motives, *predict possible deviations* in pedagogical reality;

GC15 _____ .

General competencies can be supplemented (GC15) and revised (GC1–GC14) taking forecasting and maps of the future (presence of trends, anomalies, bifurcations in the development of requirements for the training of future specialists) into account.

Drawbacks of the sessions included the following aspects: insufficient internet connection resulted in low video and audio transmitting, low motivation of stakeholders to participate in the first session (the process of participation eliminated this drawback), insufficient team work skills (domination of the leaders in the group – can be tackled by smaller groups of 3–4 participants), accentuation on the general trend (the problem is still under the consideration), low forecasting skills (the issue can be solved planning online training sessions and writing predictive texts).

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Entry Interview Results

Before the introduction of VFL, the in-depth interviews with 11 stakeholders were carried out in face-to-face format, and contained the following questions:

1. Have you ever been involved into curricula modernisation of educational institutions as the external power? If yes, describe your experience.

2. Have you ever designed the maps of the future education applied to your sphere? If yes, provide the details of your experience. If no, would you like to participate in such activities?

3. Can you assess your involvement into the curricula modernisation of local educational institutions? Rate 1–5 (1 – low level of participation, 5 – high level of participation).

4. What is the most frequent form of your involvement into curricula modernisation of local educational institutions (if applicable)?

5. Have you ever heard of foresight technology in education? Is it effective?

6. What are the competencies that are not developed in modern young teachers?

7. What are the disciplines with limited practical implementations in modern curricula?

8. Are you satisfied with the content of professional disciplines in modern university curriculum?

Qualitative analysis of the gained results of the interviews demonstrated the following aspects: 7 participants took part in the curricula modernisation in a formal way (official inclusion of stakeholders, ready-made standards and signing procedures), 4 participants either forgot about such an involvement, or were never involved into it:

"I vaguely remember about my personal involvement… I was invited to open days in the universities, but it may not deal with involvement" (excerpt 1)

"I was asked once to look through the curriculum, but I took much time, the part I was studying was quite fine in term of competencies" (excerpt 2).

All of the interviewees never took part in the mapping procedures of the future design applied to education:

"No, never" (excerpt 3).

"Once we tried to organise the perspective plan for our institution, but it failed" (excerpt 4).

At the same time, 10 out of 11 stakeholders expressed their willingness to participate in future map design and joint curricula modernisation.

Question 3 (assessment of the rank of involvement 1–5) demonstrated the 2.5 average scale (ranging from 1 to 3.5) and is considered to be the weakness of

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the process of modernisation by stakeholders, requiring paying sufficient attention to the curricula modernisation.

Forms of joint modernisation of curricula were vaguely mentioned by the stakeholders (forums, conferences, and open days), none of the forms were directly addressed to curricula modernisation.

Foresight technology is perceived differently by the participants:

"Foresight is the foreseeing the future, isn't it?" (excerpt 5).

"Foresight cannot be applied to education, it is unstable nowadays, rapidly changing and transforming …" (excerpt 6)'.

"I have faced with such a term once, but have no direct understanding of it now" (excerpt 7).

The question on competencies applied to young specialists was the most debatable one. The participants of the research mentioned ICT-skills, soft skills, organising qualities (strictness, loyalty, rapport, responsibility, team work skills):

"I cannot see the young specialist working with enthusiasm and devotion, unlike the experienced teachers who work more than even required …" (excerpt 8).

"Young teachers are good at digital skills, but not good at soft skills – they are not flexible and straightforward from time to time" (excerpt 9).

University disciplines that can lack the proper content required by the stakeholders mainly refer to professional cycle – methods of teaching, professional practice, pedagogical disciplines:

"I would alter the content of pedagogy, it is too theoretical and sometimes outdated …" (excerpt 10).

"Methods of teaching must be directed from tech skills on how to operate with digital tools (it is more than enough for teachers), but how to use them or apply soft skills" (excerpt 11).

The level of satisfaction on university curriculum content has 64% (ranging from 52% up to 76%) that is considered low and average, demanding the extra work in such a direction.

Post-Sessional Interview Results

After the sessional period in VFL FG1 participants were interviewed again. The questions for the interview contained the following aspects:

1. Was your participation in VFL deliberate? Describe your feelings.

2. Which part of the sessions was the most challenging (brainstorming, future map design, trends foreseeing, content modernisation, goal modernisation, methods and approaches modernisation)?

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3. Can you assess your involvement into the curricula modernisation of local educational institutions? Rate 1–5 (1 – low level of participation, 5 – high level of participation).

4. Did you prefer to work on modernisation alone or in groups of stakeholders? Why?

5. Can foresight bring effectiveness in curricula modernisation?

6. Are you satisfied with the process of curricula modernisation in VFL? Would you like to recommend it for future modernisation?

7. What are the limitations/weaknesses of the use of VFL?

All participants expressed their willingness to take part in VFL sessions and emphasised their positive feelings:

"It was a new experience to bring ideas together" (excerpt 12).

"I did not think it would turn effective, but it did and I was the part of it [curricula modernisation]" (excerpt 13).

The graph (Fig. 2) below demonstrates the most challenging part of curricula modernisation for session participants
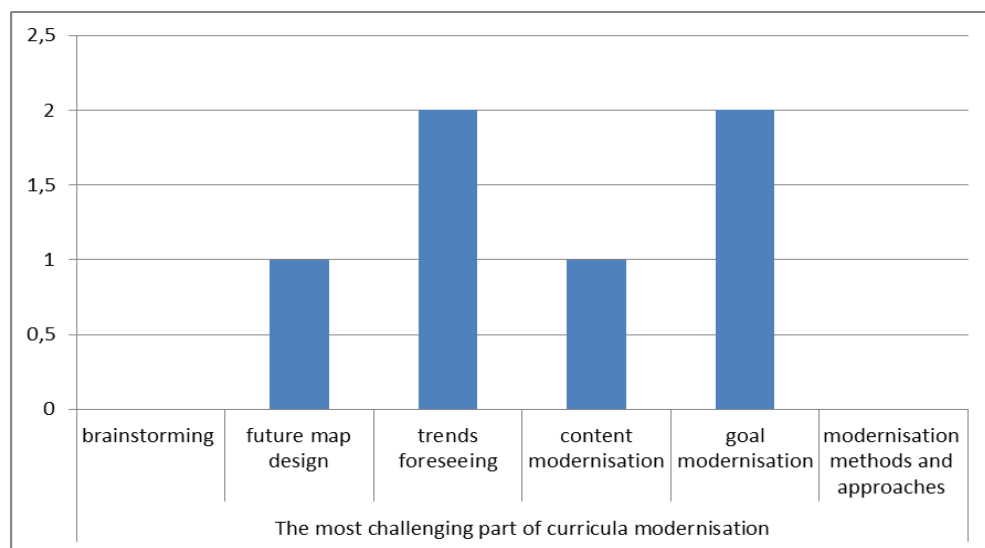

Fig. 2. Post-sessional reflection on the most challenging parts in curricula modernisation (FG1)

As it is evident, the strongest part in curricula modernisation contains trends and forecasting the education development that entrails goal-setting of perspective modernisation. Participants express their confusion on foreseeing future education in 15–30 years because of the weak development of predicting qualities,

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flexibility and adaptation: *"I cannot see the difference between 10 and 15 years perspective"; "I live now and , possible, digitalisation will no longer be a trend"; "Soft skills will be in demand, but I am not sure, it is future" (excerpts 14–16).*

The assessment rate into curricula modernisation after VFL sessions has increased prominently – from 3.5 to 4.5. Self-assessment demonstrated the higher percentage of contributing to such a process.

Question 4 concerned the attitudes towards group work versus individual modernisation of the university curricula. The results demonstrated utter preference to work in groups – 83% of the respondents chose the team modernisation. The reasons of group modernisation varied: *"The synergy is the key to any activity"; "Sharing ideas provokes new ideas, snowball of ideas"; "Sometimes, it is difficult to start any modernisation, you need someone who can generate ideas or motivate you to do it" (excerpts 17–19).*

Foresight can be effectively applied to forecasting future education and changing the trends in existing education, as the participants assessed it positively. All stakeholders treat foresight as a necessary tool for curricula modernisation.

Stakeholders were entirely satisfied with the gained results of modernisation, as well as with its process: *"I did not expect such a result, as usual, I thought we would just discuss the content and add some words"; "It was unusual … seeing the qualities of future teachers in perspective made me think a lot" (excerpts 20–21).*

The limitations of the work of VFL include the following ones: technical issues (Internet connection, troubleshooting with voice transmitting, weak signals of video, audio), absence of eye contact and tactile, insufficient work load and difficulty in planning meetings online. However, these issues can be tackled and minimised provided stable Internet access, time management and rapport in the group of stakeholders bringing diversity of thinking together.

The leading idea of VFL session is not only to share the ideas on modernisation, but also to learn to foresee the future, because stakeholders represent the force or the source of demand and social need in future specialists. The qualities to be formed, the content to be provided as well as the goals to be reached are the reflections of stakeholder mirroring the future of education.

VFL Results

The experiment was organised on the basis of sound agreement and volunteering among the stakeholders, all of the meetings were confidential and ethical. The outcomes that were gained from the experiment concerned the following three aspects:

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1. Primary outcome measured by the CSA – comparative self-assessment using the checklist – was in the creation of rapport and the power of team work of stakeholders when involving into the process of educational programme modernisation and comparing the aspects of planning before the use of the foresight method and after its application. The FG1 participants indicated their synergy in foreseeing the future through mapping, trends design and discussions in VFL;

2. Secondary outcome lied in the increase of the learning gain among FG1 stakeholders in terms of the structure of the curriculum, educational programme, types of competencies, foresight research;

3. Tertiary outcome indicated the personal growth of stakeholder involvement into curricula modernisation, as their gained experience was reflected in further modernisation of educational programmes of their majors.

FG2 participants failed to have the modernisation of the curriculum both in time and content. The CSA measurement reflected:

- the low level of involvement of stakeholders into the process of modernisation;

- extrinsic motivation to change any components of the educational programme;

- formal agreeable approach to existing standards;

- insufficient skills of maps of the future design.

Conclusion

In the present research, 22 educational programmes of humanitarian cycle of teacher training institution underwent modernisation processes within the framework of virtual sessions for stakeholders.

According to the Decree 124 (BKRU Internal Decree of Curriculum Development # 124, 2021) the structure of the educational programme encompasses the following components:

– Obligatory component (basic disciplines) – cannot be changed by the foresight sessions – 10% modernisation;

– Elective disciplines – 15% modernisation;

– Minors – 80% modernisation (Cyperpedagogy, ICT for Major Specialities).

General risks and threats in curricula modernisation that were commonly mentioned by the stakeholders include the mismatch between the labour market and the educational services market. Moreover, these risks will result in imbalance between the actual demand and the opportunities of education as two sides of social agents that virtual foresight laboratory makes closer. Rapid

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obsolescence of transmitted knowledge can be overcome provided stakeholders get involved into curricula modernisation, teaching instruction, and educational design. Partial duplication of certain issues in the content of academic disciplines of educational programmes can be omitted in case of thorough external overall evaluation of stakeholders. Insufficiently high level of focus on the practical orientation of disciplines must be prioritised by the practical segment of training at schools (excluding guided teaching and replaced by team teaching on locations).

The need to strengthen the practical training of graduates, master innovative teaching skills in formative and summative assessments, self-assessment and peer assessment, taking the results of assessment into account can be achieved employing method organisation and case study analysis, team teaching and micro-teaching during the university training.

There are issues that are still under the closer consideration of stakeholders resulting in slow tempo of curricula modernisation in Kazakhstan using VFLs:

1. Insufficient number of components in educational programmes that contribute to the development of meta-competencies and soft skills in students;

2. Insufficient amount of video content on educational programmes prepared by teaching staff in order to improve distance technologies and student-centred learning;

3. Insufficient content expertise;

4. The inconsistency of teaching methods with the interests of Z and alpha generation;

5. Insufficient level of high-quality and effective interaction between university and school teachers;

6. Insufficient involvement of graduates in cooperation with the university;

7. Lack of academic mobility among students and teaching staff;

8. The predominance of the formal level of cooperation with employers and stakeholders to discuss and agree on educational programmes;

9. Insufficient level of student involvement in the process of forming the content of discipline programmes;

10. Insufficient level of cooperation with potential employers in order to create a systematic database of vacancies for subsequent employment and career growth of graduates of educational programmes;

11. Decreased funding, staff cuts, worsening conditions and wages due to a number of objective reasons;

12. Incomplete compliance of the competencies of the teaching staff of the university with the international level (knowledge of English at the level of professional communications and conducting classes, IT training, citation of scientific works);

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13. Insufficient equipment for the qualitative implementation of the educational process with modern laboratories, simulation rooms, simulators, computers, interactive whiteboards, multimedia language classes;

14. The consequences of the pandemic after a large-scale "immersion in the distance";

15. Unwillingness to experiment with curricula due to the need for new interdisciplinary navigation professions in education.

These issues can be effectively tackled in case of constant maximal academic involvement into on-going process of modernisation in university training as well as during real school practicum on locations applying virtual tools (VFLs), and in-person instructions, recommendations.

Consequently, the experiment organised on the basis of the mediated tool in the form of the virtual foresight laboratory showed its effectiveness as the tool for maximal involvement of stakeholders in the process of curricula modernisation compared to the traditional approach of involvement in terms of flexibility (the mode of maximal involvement in distance regime, economy on venue organisation, visibility of gained results through open access to the modernised educational programmes and reshaping opportunity, feedback analysis on a regular distant basis using Miro tool).

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S. S. Brimzhanova – statistical data processing and analysis.

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